CLAIMS

What is claimed is:

1. A method of screening a subject for asthma and/or atopy comprising:

detecting the presence or absence of at least one or more markers linked to asthma and/or atopy, wherein the presence of said marker indicates that the subject is afflicted with or at risk of developing asthma and/or atopy, and wherein said marker is selected from the group consisting of D1S200, D1S1631, D5S2845, D5S2848, D5S589, D6S502, D6S503, D6S1043, D6S1007, D7S2195, D7S559, D7S1808, D7S2846, D8S1113, D8S1132, D9S922, D9S253, D10S1221, D10S1432, D11S912, D11S4131, D13S1283, D13S779, D15S822, D15S643, D17S1298, D17S787, D19S1034, D19S1165 and D21S1442 and markers within three centimorgans thereof.

2. The method according to claim 1, wherein said method is a diagnostic method.

3. The method according to claim 1, wherein said method is a prognostic method.

4. The method according to claim 1, wherein said subject is human.

5. A method for diagnosing a subject as being asthmatic, or as having a predisposition to asthma comprising:

determining the presence or absence of an allele of a polymorphic marker in the DNA of the patient, wherein *(i)* the allele is associated with a phenotype of asthma, and wherein *(ii)* the polymorphic marker is within a segment selected from the group consisting of:

a segment of chromosome 1 bordered by D1S200 and D1S1631;

a segment of chromosome 5 bordered by D5S2848 and D5S589;

a segment of chromosome 6 bordered by D6S502 and D6S503;

a segment of chromosome 6 bordered by D6S1043 and D6S1007;

a segment of chromosome 7 bordered by D7S2195 and D7S559;

a segment of chromosome 7 bordered by D7S1808 and D7S2846;

a segment of chromosome 8 bordered by D8S1113 and D8S1132;

a segment of chromosome 9 bordered by D9S922 and D9S253;

a segment of chromosome 10 bordered by D10S1221 and D10S1432;
a segment of chromosome 11 bordered by D11S4131–qter;
a segment of chromosome 11 bordered by D11S912–qter;
a segment of chromosome 13 bordered by D13S1283 and D13S779;
a segment of chromosome 15 bordered by D15S822 and D15S643;
a segment of chromosome 17 bordered by D17S1298 and D17S787;
a segment of chromosome 17 bordered by D17S2196 and D17S1290;
a segment of chromosome 19 bordered by D19S1034 and D19S1165; and
a segment of chromosome 21 bordered by Pter-D21S1442.

6. The method according to claim 5, wherein said determining the presence or absence of an allele of a polymorphic marker in the subject is performed utilizing DNA or RNA.

7. The method according to claim 5, wherein said method is a diagnostic method.

8. The method according to claim 5, wherein said method is a prognostic method.

9. The method according to claim 5, wherein said subject is human.

10. An oligonucleotide primer for amplification of an allele which is associated with asthma, wherein said allele is located at a locus in a region selected from the group consisting of:

a segment of chromosome 1 bordered by D1S200 and D1S1631;
a segment of chromosome 5 bordered by D5S2848 and D5S589;
a segment of chromosome 6 bordered by D6S502 and D6S503;
a segment of chromosome 6 bordered by D6S1043 and D6S1007;
a segment of chromosome 7 bordered by D7S2195 and D7S559;
a segment of chromosome 7 bordered by D7S1808 and D7S2846;
a segment of chromosome 8 bordered by D8S1113 and D8S1132;
a segment of chromosome 9 bordered by D9S922 and D9S253;
a segment of chromosome 10 bordered by D10S1221 and D10S1432;

a segment of chromosome 11 bordered by D11S4131–qter;
a segment of chromosome 11 bordered by D11S912–qter;
a segment of chromosome 13 bordered by D13S1283 and D13S779;
a segment of chromosome 15 bordered by D15S822 and D15S643;
a segment of chromosome 17 bordered by D17S1298 and D17S787;
a segment of chromosome 17 bordered by D17S2196 and D17S1290;
a segment of chromosome 19 bordered by D19S1034 and D19S1165; and
a segment of chromosome 21 bordered by Pter-D21S1442.

11. The oligonucleotide primer of claim 10, wherein said primer is from 5 to 50 nucleotides in length.

12. An assay for detecting a gene related to an asthma and/or atopy disorder comprising:

providing a biological sample comprising genomic DNA from a patient suspected of having or at risk for developing said asthma and/or atopy disorder;

using a probe directed toward to a region of a polymorphic marker in the subject, wherein (i) the marker is associated with a phenotypic marker of asthma and/or atopy, and wherein (ii) the polymorphic marker is within a segment selected from the group consisting of:

a segment of chromosome 1 bordered by D1S200 and D1S1631;
a segment of chromosome 5 bordered by D5S2848 and D5S589;
a segment of chromosome 6 bordered by D6S502 and D6S503;
a segment of chromosome 6 bordered by D6S1043 and D6S1007;
a segment of chromosome 7 bordered by D7S2195 and D7S559;
a segment of chromosome 7 bordered by D7S1808 and D7S2846;
a segment of chromosome 8 bordered by D8S1113 and D8S1132;
a segment of chromosome 9 bordered by D9S922 and D9S253;
a segment of chromosome 10 bordered by D10S1221 and D10S1432;
a segment of chromosome 11 bordered by D11S4131–qter;
a segment of chromosome 11 bordered by D11S912–qter;
a segment of chromosome 13 bordered by D13S1283 and D13S779;
a segment of chromosome 15 bordered by D15S822 and D15S643;
a segment of chromosome 17 bordered by D17S1298 and D17S787;

a segment of chromosome 17 bordered by D17S2196 and D17S1290;
a segment of chromosome 19 bordered by D19S1034 and D19S1165; and
a segment of chromosome 21 bordered by Pter-D21S1442; and
detecting duplications in the region of the genomic sequence of the group of chromosomes listed above.

13. A computer assisted method of identifying a proposed treatment for asthma and/or atopy comprising:

storing a database of biological data for a plurality of patients, the biological data including for each of said plurality of patients (i) a treatment type, (ii) at least one genetic marker associated with asthma and/or atopy, and (iii) at least one disease progression measure for asthma and/or atopy from which treatment efficacy may be determined; and

querying said database to determine the dependence on said genetic marker of the effectiveness of a treatment type in treating asthma and/or atopy, to thereby identify a proposed treatment as an effective treatment for a patient carrying a particular marker for asthma and/or atopy.

14. The method according to claim 13, wherein said database includes markers selected from the group consisting of

a segment of chromosome 1 bordered by D1S200 and D1S1631;
a segment of chromosome 5 bordered by D5S2848 and D5S589;
a segment of chromosome 6 bordered by D6S502 and D6S503;
a segment of chromosome 6 bordered by D6S1043 and D6S1007;
a segment of chromosome 7 bordered by D7S2195 and D7S559;
a segment of chromosome 7 bordered by D7S1808 and D7S2846;
a segment of chromosome 8 bordered by D8S1113 and D8S1132;
a segment of chromosome 9 bordered by D9S922 and D9S253;
a segment of chromosome 10 bordered by D10S1221 and D10S1432;
a segment of chromosome 11 bordered by D11S4131–qter;
a segment of chromosome 11 bordered by D11S912–qter;
a segment of chromosome 13 bordered by D13S1283 and D13S779;
a segment of chromosome 15 bordered by D15S822 and D15S643;
a segment of chromosome 17 bordered by D17S1298 and D17S787;

a segment of chromosome 17 bordered by D17S2196 and D17S1290;
a segment of chromosome 19 bordered by D19S1034 and D19S1165; and
a segment of chromosome 21 bordered by Pter-D21S1442.

15. A method of screening a subject for asthma and/or atopy comprising:

detecting the presence or absence of at least one or more markers linked to asthma and/or atopy, wherein the presence of said marker indicates that the subject is afflicted with or at risk of developing asthma and/or atopy, and wherein said marker is a segment of a chromosome bordered by D6S1043 and D6S1007 or within three centimorgans thereof.

16. The method according to claim 14, wherein said subject is of Greek descent.

17. A method of screening a subject for asthma and/or atopy comprising:

detecting the presence or absence of at least one or more markers linked to asthma and/or atopy, wherein the presence of said marker indicates that the subject is afflicted with or at risk of developing asthma and/or atopy, and wherein said marker is a segment of a chromosome bordered by D13S1283 and D13S779 or within three centimorgans thereof.

18. The method according to claim 17, wherein said subject is of Norwegian descent.

19. An oligonucleotide primer for amplification of an allele which is associated with Alzheimer's disease, wherein said allele is located at a locus in a region selected from the group consisting of:

a segment of chromosome 1 bordered by D1S200 and D1S1631;
a segment of chromosome 5 bordered by D5S2848 and D5S589;
a segment of chromosome 6 bordered by D6S502 and D6S503;
a segment of chromosome 6 bordered by D6S1043 and D6S1007;
a segment of chromosome 7 bordered by D7S2195 and D7S559;
a segment of chromosome 7 bordered by D7S1808 and D7S2846;
a segment of chromosome 8 bordered by D8S1113 and D8S1132;

a segment of chromosome 9 bordered by D9S922 and D9S253;

a segment of chromosome 10 bordered by D10S1221 and D10S1432;

a segment of chromosome 11 bordered by D11S4131–qter;

a segment of chromosome 11 bordered by D11S912–qter;

a segment of chromosome 13 bordered by D13S1283 and D13S779;

a segment of chromosome 15 bordered by D15S822 and D15S643;

a segment of chromosome 17 bordered by D17S1298 and D17S787;

a segment of chromosome 17 bordered by D17S2196 and D17S1290;

a segment of chromosome 19 bordered by D19S1034 and D19S1165; and

a segment of chromosome 21 bordered by Pter-D21S1442.

20. The oligonucleotide primer of claim 19, wherein said primer is from 5 to 50 nucleotides in length.